SOX10

Mouse Mutants

MGI database of Sox10 mutants

Sox10^{Dal}: ENU-induced; is a T-to-G transversion at nucleotide position 676 in exon 3. (direct MGI submission)

Sox10^{df10R}: Radiation-induced; this allele contains an estimated deletion of 151 kb. (Chick et al., 2005)

Sox10^{df8R}: Radiation-induced; this allele contains a deletion of more than 577 kb. (Chick et al., 2005)

Sox10^{Dom}: Spontaneous Insertion; Insertion of a guanine residue results in a translational frame shift in the ORF, replacing the putative activation domain with 99 novel amino acids ahead of a translational termination signal. (Southard-Smith et al., 1998)

Sox10^{tm1Weg}: Targeted (Reporter); In-frame insertion of a lacZ-neomycin resistance cassette replaced the coding sequences (Britsch et al., 2001)

Sox10$^{tm2(rtTA)Weg}$: Targeted (knock-in); Exons 3-5 (the entire coding region) were replaced with a reverse tetracycline controlled transactivator (rtTA) gene and a loxP-flanked Neo cassette, placing the start codon of the rtTA at the position of the endogenous start codon in exon 3, via homologous recombination. The Neo cassette was removed by crossing to mice expressing germline Cre-recombinase. Crossing to mice expressing lacZ under the control of the tetracycline inducible promoter and then treating with doxycycline resulted in X-gal staining (indicating rtTA activity) that recapitulated *Sox10* expression. (Ludwig et al., 2004b)

Sox10$^{tm3(Sox8)Weg}$: Targeted (knock-in); The *Sox8* ORF along with an IRES-EGFP and a floxed neo cassette were inserted into exon 3, replacing the entire ORF of *Sox10*. The neo cassette was removed via in vivo Cre mediated recombination. (Kellerer et al., 2006)

Sox10 ^{GeoBAC}: Transgenic, not targeted; The construct, derived from modified BAC sequence, consisted of 2.8kb of 5 flanking sequence upstream of *Sox10*, followed by exons 1-3 of *Sox10*, followed by an in-frame LacZ/Neo reporter construct. (Deal et al., 2006)

Sox10^{tm4Weg}: Targeted (knock-in); A targeting vector was constructed that contains a *Sox10* ORF that changes amino acids 71-73 from CIR to AAA, followed by a loxP flanked neo cassette. The region mutated is necessary for DNA-dependent dimerization of this transcription factor. The vector replaced the entire ORF of *Sox10* by deleting exons 3 through 5. The neo cassette was removed via in vivo Cre mediated recombination. (Schreiner et al., 2007)

Sox10^{tm5Weg}: Targeted (knock-in); A targeting vector was constructed that contains a *Sox10* ORF that encodes for a deletion of amino acids 233-306, followed by a loxP-flanked neo cassette. The region deleted has been implicated in the transactivation potential of SOX10. The vector replaced the entire ORF of *Sox10* by deleting exons 3 through 5. The neo cassette was removed via in vivo Cre-mediated recombination. (Schreiner et al., 2007)

Sox10^{Hry}: Non-coding transgene insertion; harbors a 15.9 kb deletion of non-coding sequence 47.3 kb upstream of the *Sox10* transcription start site. (Antonellis et al., 2006)

Sox10$^{tm7.1(Sox10)Weg}$: Targeted insertion upstream of endogenous *Sox10* exon 3 of rat *Sox10* gene, floxed/FRT neo, and EGFP gene (Finzsch et al., 2010)

Sox10$^{tm6(Sox100B)Weg}$: Targeted insertion of gene encoding Drosophila Sox100B and EGFP (Cossais et al., 2010)

Transgenics

Tg(Sox10-cre)1Wdr: 170kb BAC transgene with *Cre* inserted at the *Sox10* locus (Matsuoka et al., 2005)

Tg(Sox10-cre)507Mcln: A transgene in which the mouse SOX10 MCS4 (multiple species conserved sequence) directs expression of Cre (Stine et al., 2009)

Tg(Sox10-Venus): 226kb BAC transgene with the gene encoding the fluorescent Venus protein inserted at the *Sox10* locus (Shibata et al., 2010)

Tg(Sox10-EGFP)GE255Gsat: BAC transgene with EGFP inserted at first codon of *Sox10* (Direct MGI submission)

Tg(Sox10-GFP,-DTA)1Wdr: PAC transgenic containing the construct lox- GFP-poly(A)-lox-DTA downstream of *Sox10*; CRE-recombination activates DTA and causes cell death in *Sox10*-expressing lineages. (Kessaris et al., 2006)

Tg(Sox10-HIST2H2BE/Venus)ASout: A BAC transgenic containing the fluorescent Venus protein gene, fused with Histone 2B, inserted under control of the *Sox10* genomic regulatory regions. (Corpening et al., 2011)

Sox10-IRES-Venus: The gene encoding Venus protein was inserted at the *Sox10* locus downstream of the *Sox10* stop codon, thus allowing endogenous *Sox10* expression. (Motohashi et al., 2011)